Detailed Program

A star (★) indicate that the presenter is a Junior researcher and that the presentation is eligible for an award.

Day1, May 18

14:00 Registration

16:30 Welcome

17:00 Keynote1 **José Manuel Gualberto**
There and Back Again: A Personal Journey Through Recombination and Repair in Plant Mitochondria.

18:00 Keynote2 **Kinya Toriyama**
Cytoplasmic male sterility/fertility restoration systems in rice

19:15 Opening Reception

Day2, May 19

8:30–10:00 Mitochondrial Genome Evolution and Inheritance

Chairs: José Manuel Gualberto / Jeff Mower

- L1 **Luis Gabriel Brieba de Castro**
  New and Old DNA Repair Pathways in Plant Mitochondria
- L2 **Daniel Sloan**
  DNA repair and the exceptionally low mutation rates in plant mitochondrial genomes
- L3 **Kin Pan Chung**
  Unsolved puzzles of mitochondrial inheritance
- L4★ **Yuta Aoyagi**
  How did the mitochondrial genome of *Pelargonium inquinans* become so complex? Sequencing data analyses focusing on DNA repair and replication genes and copy number of mitochondrial DNA

10:00 Coffee Break

10:20–12:10 Mitochondrial RNA splicing and processing

Chairs: Hakim Mireau / Toshiharu Shikanai

- L5 **Oren Ostersetzer**
  Evolution of RNA Splicing Regulation in Plant Mitochondria: Implications for Eukaryogenesis and Land Plant Adaptation
- L6★ **Roei Matan**
  Bacterial-Like Functions of Moss Mitochondrial Maturases Shed Light on the Evolution of Intron Splicing
- L7 **Catherine Colas des Francs-Small**
  Genome-wide transcript end mapping of mitochondrial transcripts
- L8 **Takashi Hirayama**
  Analysis of *Arabidopsis* AHG2 SUPPRESSOR2 reveals a novel connection between polyadenylation and RNA editing of mitochondrial mRNA for cytochrome c maturation
- L9 **Thalia Salinas**
  Distinct nucleotidyl transferase enzymes adding C or Us to the 3' end orient the fate of mRNA in *Chlamydomonas* mitochondria

- L10 **Kamel Hammani**
  Two functionally redundant PPR RNA-binding proteins are jointly required for PEP-dependent gene expression in *Arabidopsis* chloroplasts

12:10 Lunch Break

13:40–15:20 Mitochondrial RNA Editing

Chairs: Ian Small / Philippe Giegé

- L11 **Takamasa Teramoto**
  Crystal structures of a consensus PPR-DYW protein reveal the mechanism of C-to-U RNA editing in plant chloroplasts and mitochondria
- L12★ **Jingchan Xie**
  Elucidating the diversity of plant organellar RNA editosome
- L13★ **Frederik Saulich**
  Mitochondrial RNA editing in a biomolecular condensate?
- L14 **Helena Storchova**
  The subfunctionalization of PPR editing factors in the genus *Silene*
- L15★ **Blake Fauskee**
  Evolutionary Dynamics of Mitochondrial RNA Editing Across Ferns
- L16 **Nils Rugen**
  Deep Proteomics Reveals the Impact of RNA Editing on Complex I Assembly and Identifies the Elusive OrfX Protein

15:20 Coffee Break

15:40–17:30 Mitochondrial Homeostasis, Genome Exchange and Organelle Communication

Chairs: Markus Schwarzländer / Toshihiro Obata

- L17 **Etienne Meyer**
  Biogenesis of the OXPHOS complexes: An evolutionary perspective
- L18★ **Helene Röhricht**
  Fight age, engage!
- L19 **Monika Weronika Murcha**
  Small but mighty: the role of LYRM proteins in mitochondrial biogenesis.
- L20 **Der-Fen Suen**
  NADPH Oxidases Orchestrate Mitochondrial Biogenesis–Autophagy Balance and Cell Expansion in Tapetal Development
- L21 **Stefanie Mueller-Schuessele**
  Reduced mitochondrial fission results in altered matrix redox state and stress tolerance in *Physcomitrium patens*
- L22★ **Nikolaos Glampedakis**
  Unravelling inter-organelle communication during microspore embryogenesis in rapeseed

17:30-19:00 Poster Session (odd numbers)

Day3, May 20

8:30–10:10 **Mitochondrial Dynamics, Architecture and Mitophagy**

Chairs: Wataru Sakamoto / Maria Virginia Sanchez-Puerta

- L23 **Florent Waltz**
  Investigating the Diversity of Mitochondrial Architecture at Molecular Scales
- L24 **Joanna M Chustecki**
  Linking mitochondrial dynamics and genome exchange; revisiting the tentacular cage
- L25 **Xiaohong Zhuang**
  Interplay between mitochondrial dynamics and mitophagosome formation for piecemeal mitophagy
- L26★ **Jan Multhoff**
  Auto-fueling of single mitochondrial motility by a local ATP halo
- L27★ **Eugenia Pitsili**
  Meeting the deadline: What is the role of mitochondrial disintegration in plant cell death?

10:10 Coffee Break

10:30–12:00 **Mitochondrial Translation**

Chairs: Bernard Gutmann / Florent Waltz

- L28 **Philippe Giegé**
  Specific features of plant mitochondrial translation, from ribosome assembly to translation initiation
- L29 **Hakim Mireau**
  Translational control in plant mitochondria
- L30 **Maria Virginia Sanchez-Puerta**
  Evolutionary flexibility of plant organellar translation following the loss of photosynthesis and massive horizontal gene transfer
- L31★ **Vasileios Skaltsogiannis**
  Missing steps of mitochondrial translation initiation identified in plants

12:00 Lunch Break

13:30–15:10 **Mitochondrial Stress Signaling I**

Chairs: Monika Weronika Murcha / Holger Eubel

- L32 **James Whelan**
  A Holistic Transcriptome View Of Mitochondrial Retrograde Signaling: From Gene to Cell to Organ.
- L33 **Olivier Van Aken**
  The mechanism and evolution of mitochondrial retrograde signalling in plants
- L34 **Markus Schwarzländer**
  A mitochondrial twist to how plants perceive microbes
- L35★ **Kasim Khan**
  Linking mitochondrial retrograde signaling to stress-response networks in plants
- L36★ **Eric Bowels**
  Temporal variation in mitochondrial and peroxisomal stress-responsive genes across bread wheat cultivars

• L37★ **Sara Jalili**
High-Resolution Multi-Omics of Cell-Type-Specific Mitochondria Reveals Stress-Responsive Mitotypes

15:10 Coffee Break

15:30–17:30 Mitochondrial Stress Signaling II and Environmental Responses

Chairs: Etienne Meyer / Stefanie Mueller-Schuessele

• L38 **Michela Zottini**
Decoding mitochondrial unfolded protein response (mtUPR) in abiotic stress tolerance

• L39 **Alexey Shapiguzov**
Suppressors of methyl viologen tolerance in *rcd1* uncover new mitochondria-chloroplast energy interactions

• L40 **Harvey Millar**
Role of plant mitochondria in metabolic responses to saline conditions and to salinity tissue tolerance in wheat

• L41 **Anna Kasprowicz-Maluski**
Mitochondrial homeostasis in long- term stress-adapted tobacco BY-2 cells

• L42★ **Erikan Baluku**
Mitochondrial Transcriptome Dynamics Reveal Coordinated Genome Regulation During Desiccation and Rehydration in a Resurrection Grass *Sporobolus stapfianus.*

• L43★ **Noah Ditz**
Static and dynamic protein-protein-interaction landscape revealed by recent advances in complexome profiling

17:30-19:00 Poster Session (even numbers)

Day4, May 21

8:30–9:55 Mitochondrial Metabolism and Environmental Adaptation

Chairs: Chris Carrie / Olivier Keech

• L44★ **Xuyen Le**
Alternative mitochondrial pyruvate carrier complexes regulate respiratory pyruvate flux in *Arabidopsis*

• L45★ **María del Pilar Martinez**
Mitochondrial malate metabolism acts as a control hub for photosynthesis and carbon-nitrogen balance in *Arabidopsis*

• L46★ **Selin Altintas**
Unravelling the Role of ENOD93 in Cytochrome c Oxidase Regulation and Organic Nitrogen-dependent Metabolism in Plants

• L47★ **Lucie Schröder**
Seasonal Regulation of Energy Metabolism in *Viscum album*: A Proteomic Perspective on Life without Complex I

• L48 **Yasuko Ito-Inaba**
The Role of Alternate Respiration in Cycad Thermogenesis and Its Implications for Plant Thermogenesis

• L49 **Ko Noguchi**
Effects of the inhibition of the mitochondrial respiratory chain on photosynthetic induction

9:55 Coffee Break

10:10–11:50 Engineering, Related Organellar Research and Reproduction

Kristina Kühn / Olivier Van Aken

- L50★ **Kosuke Kuwabara**
  Homozygous intronic mutation of nuclear-encoded mitochondrial RNA polymerase induces strong fertility restoration in cytoplasmic male sterile tomato
- L51★ **Ron Mizrahi**
  ISE1 is a plastid, not mitochondrial, DEAD-box RNA helicase essential for rRNA maturation and ribosome biogenesis
- L52★ **Jingxiu Ji**
  Quantitative mapping of the Multiple Transcription Initiation Sites of *Arabidopsis atp9*
- L53★ **Issei Nakazato**
  Random A-to-G base editing in the target gene of the *Arabidopsis* chloroplast genome
- L54★ **Nanami Kosaka**
  Chloroplast- and mitochondrion-specific random C-to-T mutagenesis for forward genetics of organelle genomes in *Arabidopsis*
- L55 **Keiji Numata**
  Peptide-mediated gene delivery system for plant organellar modifications
- L56 **Johannes W Vos**
  Challenges of Cytoplasmic Male Sterility management

11:50 Lunch Break

13:00 Excursions

18:00

Day5, May 22

8:50–10:10 Mitochondrial Engineering and Biotechnology

Chairs: Kamel Hammani / Luis Gabriel Brieba de Castro

- L57 **Farley Kwok van der Giezen**
  Engineering and optimising RNA editing proteins for mitochondrial biotechnology
- L58 **Simon Law**
  Mitochondria-Specific Protein Delivery by Protease-Triggered Release in Plan ts with Single-Walled Carbon Nanotubes
- L59 **Keisuke Igarashi**
  GFA-GraphDepthViz3D: An Extensible Web-Based Viewer for Interpreting Plant Organelle Genome Graphs Through Read Depth Dynamics
- L60 **Shin-ichi Arimura**
  Genome Editing of Plant Mitochondria and Plastids: Technologies, Applications, and Prospects

10:10 Coffee Break

10:30-12:10 **Mitochondrial Metabolism and Respiration**

Chairs: Harvey Millar / James Whelan

- L61 **Olivier Keech**
  What are mitochondria doing during leaf senescence?
- L62 **Toshihiro Obata**
  The functions of the tricarboxylic acid cycle metabolon: Lessons from yeast
- L63 **Huang Li**
  Dissecting Mitochondrial Electron Transport Chain Regulation and Organellar Crosstalk in *Chlamydomonas reinhardtii*
- L64 **Boon Leong Lim**
  Subcellular pyruvate pools in living *Arabidopsis* thaliana revealed by genetically encoded biosensors
- L65 **Franziska Kuhnert**
  Identification and Characterization of Mitochondrial Branched Chain Amino Acid Transporters Enabling Stress Responsive Catabolism in *Arabidopsis thaliana*

12:10 Lunch Break

13:40–15:20 **Mitochondrial Genome Maintenance, Inheritance and Fertility**

Chairs: Kin Pan Chung / Daniel Sloan

- L66 **Jeff Mower**
  Extreme mitogenome evolution in *Plantaginaceae* and *Geraniaceae*
- L67 **Wataru Sakamoto**
  From pollen to bryophytes: evolutionary conservation of DPD1-mediated organelle DNA degradation
- L68 **Ian Small**
  Cloning and characterisation of fertility restorer genes for hybrid seed production in wheat
- L69 **Ian Max Møller**
  Exchange through mitochondrial fusion-fission is necessary to overcome stoichiometric challenges in repair of plant mtDNA

15:20 Final remarks, next ICPMB

16:40 Bus to the Gala Venue Departs

18:00 Closing Gala

Poster Prizes

Party

22:00